

XVI. b. PAGES 185, 186.

1. 4, 1, 2, 2, 1, 1, 1.
2. $\cdot 8821259$, $2\cdot 8821259$, $3\cdot 8821259$, $5\cdot 8821259$, $6\cdot 8821259$.
3. 5, 2, 4, 1.
4. Second decimal place; units' place; fifth decimal place.
5. 1·8061800. 6. 1·242793. 7. 1·1072100. 8. 2·0969100.
9. 1·1583626. 10. $\cdot 6690067$. 11. $\cdot 3597271$. 12. $\cdot 0563520$.
13. 1·5052973. 14. $\cdot 41092388$. 15. 1·918445. 16. 191562·1.
17. 1·1998692. 18. 1·0039238. 19. $9\cdot 076226$. 20. 178·144516.
21. 9. 23. 301. 24. 3·16. 25. 4·29. 26. 1·206. 27. 14·206.
28. 4·562. 29. $x = \frac{\log 3}{\log 3 - \log 2}$; $y = \frac{\log 2}{\log 3 - \log 2}$.
30. $x = \frac{3 \log 3 - 2 \log 2}{4(\log 3 - \log 2)}$; $y = \frac{\log 3}{4(\log 3 - \log 2)}$. 31. 1·64601.
32. $\frac{\log 2}{2 \log 7} = \cdot 1781$; $\frac{2 \log 7}{\log 2} = 5\cdot 614$.

XVII. PAGES 195 - 197.

1. $\log_e 2$. 2. $\log_e 3 - \log_e 2$. 6. $\cdot 0020000006566670$.
9. $e^{x^2} - e^{y^2}$. 10. $\cdot 8150980$; $1\cdot 0413927$; $1\cdot 1139434$. In Art. 225 put $n = 50$ in (2); $n = 10$ in (1); and $n = 1000$ in (1) respectively.
12. $(-1)^{r+1} \cdot \frac{2^r + 1}{r} x^r$. 13. $(-1)^r \frac{13^r + 2^r}{r} x^r$.
14. $2 \left\{ 1 + \frac{(2x)^2}{2!} + \frac{(2x)^4}{4!} + \dots + \frac{(2x)^r}{r!} + \dots \right\}$.
15. $1 - \frac{x^2}{2} + \frac{x^4}{4} - \frac{x^6}{6} + \dots + (-1)^r \frac{x^{2r}}{2r} + \dots$ 18. $\frac{x}{1-x} + \log_e(1-x)$.
24. $\cdot 69311718$; $1\cdot 09861229$; $1\cdot 60943792$; $a = -\log_e \left(1 - \frac{1}{10} \right) = \cdot 105360516$;
 $b = -\log_e \left(1 - \frac{4}{100} \right) = \cdot 010821995$; $c = \log_e \left(1 + \frac{1}{80} \right) = \cdot 012422520$.

XVIII. a. PAGE 202.

1. £1146. 14s. 10d. 2. £720. 3. 14·2 years.
4. £6768. 7s. 10½d. 5. 9·6 years. 8. £496. 19s. 1¾d.
9. A little less than 7 years. 10. £119. 18s. 5¾d.

XVIII. b. PAGE 207.

1. 6 per cent. 2. £3137. 2s. 2¾d. 3. £110.
4. 3 per cent. 5. 28½ years. 6. £1275. 7. £926. 2s.
8. £6755. 13s. 9. £183. 18s. 10. 3½ per cent. 11. £616. 9s. 1½d.
13. £1308. 12s. 4½d. 15. £4200.